Supplementary material to

Thermodynamic properties of binary mixtures of terpenes and 1-propanol in the temperature range from 288.15 to 323.15 K at atmospheric pressure

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Table S1 Experimental density, excess molar volume, viscosity, viscosity deviation functions and thermal expansion coefficient of the investigated binary mixtures at temperature range from 288.15 to 323.15 K and atmospheric pressure

x_1	P / g m^{-3}	V^E / cm^3 mol^{-1}	η / mPa s	$\Delta\eta$ /mPa s	α / 10^{-4} K^{-1}
		α-pinen (1) + 1-propanol (2)			
		288.15 K			
0.0000	0.8074	-	2.502	-	9.55
0.1001	0.8197	-0.1465	2.310	-0.0969	9.71
0.2002	0.8276	-0.0535	2.125	-0.1862	9.85
0.3000	0.8343	0.0206	1.980	-0.2356	9.83
0.4000	0.8402	0.0652	1.868	-0.2527	9.80
0.5000	0.8454	0.0892	1.766	-0.2587	9.78
0.6002	0.8500	0.1003	1.664	-0.2653	9.73
0.6990	0.8541	0.0909	1.610	-0.2257	9.68
0.8001	0.8579	0.0650	1.580	-0.1585	9.64
0.9000	0.8613	0.0284	1.564	-0.0799	9.48
1.0000	0.8643	-	1.548	-	9.30
		293.15 K			
0.0000	0.8035	-	2.194	-	9.73
0.1001	0.8157	-0.1399	2.025	-0.0900	9.88
0.2002	0.8235	-0.0360	1.875	-0.1619	10.01
0.3000	0.8302	0.0388	1.759	-0.1998	9.99
0.4000	0.8361	0.0838	1.674	-0.2058	9.97
0.5000	0.8412	0.1219	1.590	-0.2120	9.94
0.6002	0.8458	0.1341	1.511	-0.2121	9.89
0.6990	0.8499	0.1255	1.460	-0.1864	9.84
0.8001	0.8537	0.1004	1.436	-0.1306	9.79
0.9000	0.8572	0.0469	1.425	-0.0637	9.61
1.0000	0.8603	-	1.410	-	9.42
		298.15 K			
0.0000	0.7996	-	1.968	-	9.92
0.1001	0.8116	-0.1247	1.813	-0.0868	10.05
0.2002	0.8194	-0.0218	1.681	-0.1514	10.17
0.3000	0.8260	0.0639	1.577	-0.1871	10.17
0.4000	0.8319	0.1084	1.505	-0.1913	10.14
0.5000	0.8370	0.1459	1.437	-0.1915	10.10
0.6002	0.8416	0.1573	1.375	-0.1846	10.05
0.6990	0.8457	0.1478	1.334	-0.1588	10.00
0.8001	0.8495	0.1216	1.309	-0.1144	9.93
0.9000	0.8530	0.0667	1.300	-0.0562	9.75
1.0000	0.8562	-	1.288	-	9.54
		303.15 K			
0.0000	0.7956	-	1.750	-	10.11
0.1001	0.8075	-0.1177	1.622	-0.0705	10.23
0.2002	0.8152	-0.0036	1.500	-0.1358	10.33
0.3000	0.8218	0.0829	1.413	-0.1660	10.34
0.4000	0.8277	0.1277	1.357	-0.1657	10.31
0.5000	0.8328	0.1657	1.302	-0.1637	10.27
0.6002	0.8374	0.1772	1.253	-0.1561	10.21
0.6990	0.8415	0.1677	1.220	-0.1330	10.16
0.8001	0.8453	0.1413	1.202	-0.0935	10.08
0.9000	0.8489	0.0682	1.194	-0.0452	9.88
1.0000	0.8521	-	1.182	-	9.66
		308.15 K			

x_1	P / g m^{-3}	V^E / cm^3 mol^{-1}	η / mPa s	$\Delta\eta$ /mPa s	α / 10^{-4} K^{-1}
0.0000	0.7915	-	1.560	-	10.30
0.1001	0.8034	-0.1192	1.449	-0.0634	10.41
0.2002	0.8109	0.0188	1.343	-0.1216	10.50
0.3000	0.8175	0.1079	1.271	-0.1469	10.52
0.4000	0.8233	0.1684	1.228	-0.1431	10.49
0.5000	0.8285	0.1953	1.184	-0.1399	10.44
0.6002	0.8331	0.2089	1.145	-0.1314	10.38
0.6990	0.8372	0.2012	1.119	-0.1110	10.33
0.8001	0.8410	0.1766	1.106	-0.0758	10.23
0.9000	0.8447	0.0867	1.097	-0.0373	10.02
1.0000	0.8480	-	1.087	-	9.78
			313.15 K		
0.0000	0.7875	-	1.396	-	10.49
0.1001	0.7992	-0.1034	1.296	-0.0602	10.58
0.2002	0.8067	0.0340	1.212	-0.1043	10.66
0.3000	0.8132	0.1345	1.149	-0.1281	10.70
0.4000	0.8190	0.1946	1.116	-0.1216	10.67
0.5000	0.8241	0.2353	1.079	-0.1187	10.61
0.6002	0.8287	0.2490	1.047	-0.1109	10.55
0.6990	0.8328	0.2413	1.026	-0.0926	10.50
0.8001	0.8367	0.1992	1.017	-0.0610	10.39
0.9000	0.8404	0.1075	1.009	-0.0300	10.17
1.0000	0.8438	-	0.999	-	9.91
			318.15 K		
0.0000	0.7832	-	1.250	-	10.69
0.1001	0.7949	-0.1029	1.167	-0.0502	10.77
0.2002	0.8023	0.0494	1.098	-0.0866	10.83
0.3000	0.8088	0.1538	1.045	-0.1071	10.88
0.4000	0.8146	0.2174	1.016	-0.1040	10.85
0.5000	0.8197	0.2614	0.987	-0.0998	10.78
0.6002	0.8243	0.2782	0.964	-0.0904	10.72
0.6990	0.8284	0.2733	0.949	-0.0731	10.67
0.8001	0.8323	0.2339	0.940	-0.0494	10.54
0.9000	0.8361	0.1259	0.932	-0.0253	10.31
1.0000	0.8396	-	0.925	-	10.03
			323.15 K		
0.0000	0.7791	-	1.125	-	10.88
0.1001	0.7906	-0.0846	1.053	-0.0454	10.95
0.2002	0.7980	0.0691	0.994	-0.0779	11.01
0.3000	0.8044	0.1873	0.952	-0.0935	11.06
0.4000	0.8102	0.2525	0.929	-0.0899	11.03
0.5000	0.8153	0.2979	0.906	-0.0862	10.96
0.6002	0.8199	0.3159	0.889	-0.0766	10.90
0.6990	0.8240	0.3120	0.877	-0.0623	10.84
0.8001	0.8279	0.2732	0.871	-0.0418	10.70
0.9000	0.8318	0.1465	0.864	-0.0218	10.45
1.0000	0.8354	-	0.859	-	10.16
			p-cymene (1) + 1-propanol (2)		
			288.15 K		
0.0000	0.8074	-	2.502	-	9.55
0.0998	0.8190	-0.1439	2.064	-0.2798	9.66
0.1999	0.8268	-0.0938	1.730	-0.4551	9.65
0.2997	0.8333	-0.0453	1.492	-0.5354	9.68
0.4001	0.8389	-0.0045	1.311	-0.5565	9.71
0.4998	0.8437	0.0320	1.179	-0.5308	9.66
0.6003	0.8480	0.0537	1.069	-0.4815	9.61
0.7000	0.8518	0.0654	1.005	-0.3878	9.47
0.7919	0.8550	0.0613	0.963	-0.2839	9.37
0.9002	0.8585	0.0317	0.931	-0.1437	9.25
1.0000	0.8614	-	0.917	-	9.04

x_1	P / g m^{-3}	V^E / cm^3 mol^{-1}	η / mPa s	$\Delta\eta$ /mPa s	α / 10^{-4} K^{-1}
		293.15 K			
0.0000	0.8035	-	2.194	-	9.73
0.0998	0.8150	-0.1354	1.819	-0.2401	9.84
0.1999	0.8227	-0.0730	1.535	-0.3900	9.83
0.2997	0.8292	-0.0223	1.331	-0.4589	9.85
0.4001	0.8348	0.0207	1.182	-0.4732	9.86
0.4998	0.8396	0.0593	1.071	-0.4493	9.81
0.6003	0.8439	0.0831	0.987	-0.3985	9.76
0.7000	0.8477	0.0968	0.931	-0.3202	9.64
0.7919	0.8509	0.0944	0.893	-0.2341	9.53
0.9002	0.8545	0.0492	0.866	-0.1152	9.39
1.0000	0.8575	-	0.847	-	9.16
		298.15 K			
0.0000	0.7996	-	1.968	-	9.92
0.0998	0.8110	-0.1267	1.642	-0.2094	10.03
0.1999	0.8187	-0.0629	1.395	-0.3381	10.00
0.2997	0.8251	0.0012	1.217	-0.3985	10.02
0.4001	0.8307	0.0464	1.084	-0.4140	10.01
0.4998	0.8355	0.0872	0.985	-0.3956	9.96
0.6003	0.8398	0.1131	0.907	-0.3551	9.91
0.7000	0.8436	0.1288	0.862	-0.2837	9.80
0.7919	0.8469	0.1116	0.831	-0.2067	9.69
0.9002	0.8505	0.0670	0.809	-0.1008	9.54
1.0000	0.8536	-	0.793	-	9.28
		303.15 K			
0.0000	0.7956	-	1.750	-	10.11
0.0998	0.8069	-0.1179	1.466	-0.1837	10.21
0.1999	0.8146	-0.0527	1.255	-0.2941	10.18
0.2997	0.8210	0.0129	1.102	-0.3461	10.19
0.4001	0.8265	0.0725	0.990	-0.3579	10.17
0.4998	0.8313	0.1156	0.906	-0.3414	10.11
0.6003	0.8356	0.1437	0.840	-0.3059	10.06
0.7000	0.8395	0.1455	0.802	-0.2436	9.96
0.7919	0.8428	0.1291	0.776	-0.1770	9.86
0.9002	0.8464	0.0852	0.759	-0.0852	9.68
1.0000	0.8496	-	0.744	-	9.40
		308.15 K			
0.0000	0.7915	-	1.560	-	10.30
0.0998	0.8027	-0.1070	1.313	-0.1602	10.40
0.1999	0.8104	-0.0386	1.132	-0.2551	10.37
0.2997	0.8168	0.0304	1.001	-0.2998	10.36
0.4001	0.8223	0.0935	0.905	-0.3098	10.33
0.4998	0.8271	0.1398	0.833	-0.2954	10.27
0.6003	0.8314	0.1710	0.777	-0.2642	10.21
0.7000	0.8353	0.1757	0.746	-0.2099	10.13
0.7919	0.8386	0.1618	0.724	-0.1520	10.02
0.9002	0.8423	0.1028	0.711	-0.0723	9.83
1.0000	0.8456	-	0.697	-	9.52
		313.15 K			
0.0000	0.7875	-	1.366	-	10.49
0.0998	0.7986	-0.0997	1.174	-0.1476	10.59
0.1999	0.8062	-0.0201	1.016	-0.2305	10.55
0.2997	0.8125	0.0619	0.907	-0.2644	10.53
0.4001	0.8180	0.1264	0.828	-0.2687	10.48
0.4998	0.8228	0.1742	0.766	-0.2555	10.42
0.6003	0.8271	0.2066	0.718	-0.2287	10.37
0.7000	0.8310	0.2124	0.693	-0.1792	10.30
0.7919	0.8343	0.1992	0.675	-0.1282	10.19
0.9002	0.8381	0.1227	0.665	-0.0575	9.98
1.0000	0.8415	-	0.647	-	9.65

x_1	P / g m^{-3}	V^E / cm^3 mol^{-1}	η / mPa s	$\Delta\eta$ /mPa s	α / 10^{-4} K^{-1}
		318.15 K			
0.0000	0.7832	-	1.250	-	10.69
0.0998	0.7942	-0.0866	1.064	-0.1225	10.79
0.1999	0.8018	-0.0015	0.931	-0.1919	10.74
0.2997	0.8081	0.0860	0.834	-0.2253	10.71
0.4001	0.8136	0.1560	0.764	-0.2314	10.65
0.4998	0.8184	0.2090	0.711	-0.2201	10.58
0.6003	0.8227	0.2467	0.671	-0.1962	10.53
0.7000	0.8266	0.2573	0.649	-0.1545	10.47
0.7919	0.8300	0.2313	0.635	-0.1106	10.36
0.9002	0.8339	0.1400	0.627	-0.0499	10.13
1.0000	0.8374	-	0.613	-	9.78
		323.15 K			
0.0000	0.7791	-	1.125	-	10.88
0.0998	0.7900	-0.0750	0.963	-0.1071	10.99
0.1999	0.7976	0.0136	0.847	-0.1685	10.93
0.2997	0.8039	0.1048	0.764	-0.1969	10.89
0.4001	0.8094	0.1784	0.705	-0.2021	10.81
0.4998	0.8142	0.2349	0.660	-0.1924	10.74
0.6003	0.8185	0.2759	0.626	-0.1719	10.69
0.7000	0.8224	0.2895	0.608	-0.1353	10.64
0.7919	0.8258	0.2660	0.596	-0.0970	10.53
0.9002	0.8297	0.1770	0.590	-0.0438	10.28
1.0000	0.8334	-	0.579	-	9.90
		linalool (1) + 1-propanol (2)			
		288.15 K			
0.0000	0.8074	-	2.502	-	9.55
0.1001	0.8221	-0.2578	3.275	0.3447	9.23
0.2002	0.8332	-0.4641	3.995	0.6371	9.31
0.2997	0.8411	-0.5449	4.609	0.8264	9.31
0.4000	0.8471	-0.5525	5.056	0.8447	9.34
0.4995	0.8519	-0.5349	5.362	0.7245	9.35
0.5998	0.8557	-0.4693	5.630	0.5640	9.35
0.7002	0.8589	-0.3934	5.897	0.4025	9.32
0.8003	0.8615	-0.2876	6.194	0.2714	9.29
0.9001	0.8637	-0.1689	6.503	0.1534	9.31
1.0000	0.8654	-	6.776	-	9.33
		293.15 K			
0.0000	0.8035	-	2.194	-	9.73
0.1001	0.8182	-0.2648	2.839	0.3211	9.46
0.2002	0.8293	-0.4773	3.411	0.5695	9.51
0.2997	0.8371	-0.5505	3.877	0.7132	9.50
0.4000	0.8431	-0.5612	4.205	0.7173	9.51
0.4995	0.8479	-0.5463	4.432	0.6211	9.52
0.5998	0.8517	-0.4830	4.605	0.4694	9.51
0.7002	0.8549	-0.4093	4.811	0.3503	9.48
0.8003	0.8575	-0.3053	5.014	0.2295	9.45
0.9001	0.8597	-0.1884	5.240	0.1327	9.47
1.0000	0.8613	-	5.431	-	9.49
		298.15 K			
0.0000	0.7996	-	1.968	-	9.92
0.1001	0.8143	-0.2719	2.479	0.2713	9.69
0.2002	0.8253	-0.4792	2.914	0.4669	9.71
0.2997	0.8331	-0.5561	3.265	0.5792	9.70
0.4000	0.8391	-0.5700	3.502	0.5766	9.69
0.4995	0.8438	-0.5428	3.671	0.5072	9.71
0.5998	0.8476	-0.4807	3.797	0.3923	9.68
0.7002	0.8508	-0.4080	3.945	0.3003	9.64
0.8003	0.8534	-0.3049	4.081	0.1963	9.62
0.9001	0.8556	-0.1885	4.243	0.1194	9.64
1.0000	0.8572	-	4.362	-	9.66

x_1	P / g m^{-3}	V^E / cm^3 mol^{-1}	η / mPa s	$\Delta\eta$ /mPa s	α / 10^{-4} K^{-1}
		303.15 K			
0.0000	0.7956	-	1.750	-	10.11
0.1001	0.8104	-0.2876	2.163	0.2294	9.92
0.2002	0.8213	-0.4887	2.504	0.3873	9.92
0.2997	0.8291	-0.5685	2.770	0.4710	9.89
0.4000	0.8350	-0.5705	2.950	0.4667	9.87
0.4995	0.8398	-0.5592	3.079	0.4131	9.89
0.5998	0.8435	-0.4822	3.176	0.3266	9.85
0.7002	0.8467	-0.4096	3.294	0.2598	9.81
0.8003	0.8493	-0.3062	3.390	0.1728	9.78
0.9001	0.8515	-0.1895	3.514	0.1135	9.80
1.0000	0.8531	-	3.584	-	9.82
		308.15 K			
0.0000	0.7915	-	1.560	-	10.30
0.1001	0.8063	-0.2952	1.895	0.1951	10.15
0.2002	0.8172	-0.5027	2.165	0.3244	10.13
0.2997	0.8249	-0.5747	2.371	0.3901	10.09
0.4000	0.8308	-0.5798	2.507	0.3858	10.05
0.4995	0.8355	-0.5561	2.608	0.3460	10.08
0.5998	0.8393	-0.4966	2.683	0.2809	10.02
0.7002	0.8425	-0.4263	2.774	0.2302	9.98
0.8003	0.8451	-0.3248	2.845	0.1609	9.95
0.9001	0.8472	-0.1897	2.924	0.1000	9.97
1.0000	0.8488	-	2.965	-	9.99
		313.15 K			
0.0000	0.7875	-	1.366	-	10.49
0.1001	0.8022	-0.2920	1.658	0.1515	10.39
0.2002	0.8130	-0.4930	1.870	0.2517	10.34
0.2997	0.8208	-0.5808	2.033	0.3049	10.28
0.4000	0.8267	-0.5892	2.143	0.3041	10.23
0.4995	0.8313	-0.5527	2.226	0.2759	10.27
0.5998	0.8351	-0.4945	2.287	0.2257	10.19
0.7002	0.8383	-0.4252	2.358	0.1860	10.16
0.8003	0.8409	-0.3246	2.412	0.1287	10.12
0.9001	0.8430	-0.1899	2.478	0.0836	10.14
1.0000	0.8446	-	2.505	-	10.16
		318.15 K			
0.0000	0.7832	-	1.250	-	10.69
0.1001	0.7979	-0.2978	1.475	0.1362	10.64
0.2002	0.8087	-0.5033	1.648	0.2207	10.56
0.2997	0.8164	-0.5810	1.773	0.2573	10.49
0.4000	0.8223	-0.5904	1.861	0.2564	10.42
0.4995	0.8269	-0.5544	1.925	0.2321	10.46
0.5998	0.8307	-0.4964	1.975	0.1929	10.37
0.7002	0.8339	-0.4273	2.031	0.1599	10.33
0.8003	0.8365	-0.3264	2.073	0.1126	10.30
0.9001	0.8386	-0.1911	2.122	0.0730	10.32
1.0000	0.8402	-	2.138	-	10.34
		323.15 K			
0.0000	0.7791	-	1.125	-	10.88
0.1001	0.7937	-0.2946	1.310	0.1131	10.88
0.2002	0.8045	-0.5057	1.450	0.1810	10.78
0.2997	0.8122	-0.5874	1.551	0.2108	10.69
0.4000	0.8181	-0.6001	1.624	0.2114	10.61
0.4995	0.8227	-0.5669	1.671	0.1865	10.65
0.5998	0.8265	-0.5114	1.719	0.1625	10.55
0.7002	0.8297	-0.4446	1.764	0.1358	10.51
0.8003	0.8323	-0.3457	1.797	0.0967	10.47
0.9001	0.8344	-0.2121	1.835	0.0632	10.49
1.0000	0.8359	-	1.844	-	10.51